



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification <sup>6</sup> : <b>C07C 229/22, 227/18, A61K 31/195</b></p>	<b>A1</b>	<p>(11) International Publication Number: <b>WO 96/28412</b></p> <p>(43) International Publication Date: 19 September 1996 (19.09.96)</p>						
<p>(21) International Application Number: <b>PCT/GB96/00553</b></p> <p>(22) International Filing Date: 8 March 1996 (08.03.96)</p> <p>(30) Priority Data:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">9504948.2</td> <td style="width: 33%;">10 March 1995 (10.03.95)</td> <td style="width: 33%;">GB</td> </tr> <tr> <td>9525822.4</td> <td>18 December 1995 (18.12.95)</td> <td>GB</td> </tr> </table> <p>(71) Applicant (for all designated States except US): <b>THE NORWEGIAN RADIUM HOSPITAL RESEARCH FOUNDATION</b> [NO/NO]; Montebello, N-0310 Oslo 3 (NO).</p> <p>(71) Applicant (for GB only): <b>DZIEGLEWSKA, Hanna, Eva</b> [GB/GB]; Frank B. Dehn &amp; Co., Imperial House, 15-19 Kingsway, London WC2B 6UZ (GB).</p> <p>(72) Inventors; and</p> <p>(75) Inventors/Applicants (for US only): <b>GIERSKCKY, Karl, Erik</b> [NO/NO]; The Norwegian Radium Hospital, Montebello, N-0310 Oslo (NO). <b>MOAN, Johan</b> [NO/NO]; (NO). <b>PENG, Qian</b> [CN/NO]; (NO). <b>STEEN, Harald</b> [NO/NO]; Institute of Cancer Research, Montebello, N-0310 Oslo (NO). <b>WARLOE, Trond</b> [NO/NO]; The Norwegian Radium Hospital, Montebello, N-0310 Oslo (NO). <b>BJORSETH, Alf</b> [NO/NO]; Norwegian Radium Hospital Research Foundation, Montebello, N-0310 Oslo 3 (NO).</p>			9504948.2	10 March 1995 (10.03.95)	GB	9525822.4	18 December 1995 (18.12.95)	GB
9504948.2	10 March 1995 (10.03.95)	GB						
9525822.4	18 December 1995 (18.12.95)	GB						
<p>(74) Agents: <b>DZIEGLEWSKA, Hanna, Eva et al.; Frank B. Dehn &amp; Co., 179 Queen Victoria Street, London EC4V 4EL (GB).</b></p> <p>(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> With international search report.</p>								
<p>(54) Title: <b>ESTERS OF 5-AMINOLEVULINIC ACID AS PHOTSENSITIZING AGENTS IN PHOTOCHEMOTHERAPY</b></p>								
<p>(57) Abstract</p> <p>The present invention relates to compounds being esters of 5-aminolevulinic acids or pharmaceutically acceptable salts thereof, including compounds of formula (I) <math>R_2^2N-CH_2COCH_2-CH_2CO-OR^1</math>, (wherein <math>R^1</math> may represent alkyl optionally substituted by hydroxy, alkoxy, acyloxy, alkoxycarbonyloxy, amino, aryl, oxo or fluoro groups and optionally interrupted by oxygen, nitrogen, sulphur or phosphorus atoms; and <math>R^2</math> represents a hydrogen atom or a group <math>R^1</math>, and both <math>R^2</math> groups may be the identical or different), and their use in diagnosis and photochemotherapy of disorders or abnormalities of external or internal surfaces of the body, and products and kits for performing the invention.</p>								
<div style="display: flex; justify-content: space-around;"> <div style="width: 48%;"> <p style="text-align: center;"><b>Free Ala on mouse</b></p> </div> <div style="width: 48%;"> <p style="text-align: center;"><b>Ala Ethylester</b></p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="width: 48%;"> <p style="text-align: center;"><b>Ala methylester</b></p> </div> <div style="width: 48%;"> <p style="text-align: center;"><b>Ala propylester</b></p> </div> </div> <p style="text-align: center; margin-top: 10px;">Wavelength (nm)</p>								